

# **Committee on Resources**

## **Subcommittee on Energy & Mineral Resources**

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### **Statement**

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**STATEMENT OF**  
**Dirk J.A. van Zyl**  
**Director, Mining Life-Cycle Center**  
**Mackay School of Mines, University of Nevada, Reno**  
**before the**  
**U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON RESOURCES,**  
**SUBCOMMITTEE ON ENERGY & MINERAL RESOURCES**  
**MARCH 28, 2000**  
*Concerning*  
**H.R.2753, THE ABANDONED MINE RESTORATION ACT OF 1999**

Good morning, ladies and gentlemen, Madam chairman and members of the Subcommittee on Energy and Mineral Resources of the U.S. House of Representatives Committee on Resources, thank you for providing me the opportunity to appear before you today in support of H.R. 2753, a bill to authorize the Secretary of the Army to carry out a program for the restoration of abandoned mine sites.

My name is Dirk van Zyl and I am the Director of the recently formed Mining Life-Cycle Center and Professor of Mining Engineering, Mackay School of Mines, at the University of Nevada, Reno. The Mining Life-Cycle (MLC) Center is devoted to addressing the key environmental and life-cycle issues facing mining, specifically noncoal mining, in the United States and abroad. This is accomplished through teaching, research and outreach activities. The life cycle of a mine includes all the activities from exploration through development, operation and closure. Abandoned mines can be considered a special case of the closure phase of mines and are therefore of considerable interest to our activities.

There are many abandoned noncoal mine sites in the Western United States where mining activities occurred during the last two centuries. These mines were developed before we had a clear understanding of the potential environmental impacts of mining to the water resources at the mine site. Many tens of thousands of abandoned mine workings can be identified, however, a much smaller number of these workings actually impacts water resources.

The major impact to water resources from these noncoal, abandoned mines is through the release of metals as a result of leaching of the naturally occurring minerals. One of the main long-term issues associated with abandoned mine sites is the formation of acid drainage through the oxidation of sulfide minerals in the presence of oxygen and water. The water quality of streams, and therefore their ability to sustain aquatic life, can be adversely impacted by acid drainage discharge. Finding solutions to mitigate or eliminate acid drainage from abandoned mines is a major area where technical research and development is needed.

The funding of University and other research to evaluate, develop and implement new technologies to address acid drainage, and other environmental concerns, at abandoned noncoal mine sites must be a priority. Some funding is available for such activities in the coal sector through the Surface Mining and Reclamation Act of 1977, which places a per ton assessment fee on coal production. However, no similar funding mechanism exists for noncoal, abandoned mines. Differences in geologic and climatic conditions make it impossible to directly apply the technologies and solutions to noncoal mining that are found to be successful in coal mining. New ideas must be researched and developed.

H.R. 2753 provides for research funding to the Western Universities Mine-Land Reclamation and Restoration Consortium. Such funding will provide a very important mechanism to address the technical issues associated with abandoned noncoal mines. Many regions in the world with geologic and climatic conditions similar to that of the Western United States have environmental problems associated with abandoned mines. Research developed by the Consortium could therefore become a valuable export item, both in the form of technical support and specific technologies.

My Center at the University of Nevada, Reno has recently been selected as the University Research and Training Center for the Acid Drainage Technology Initiative Metal Mining Sector (ADTI-MMS). The ADTI-MMS consists of volunteer representatives from state and federal government, academia, the mining industry, and consulting firms who are involved in the environmentally sound management of metal-mine wastes in the United States. A Western University Consortium consisting of the University of Nevada, Reno, University of Alaska, Fairbanks, University of Idaho, University of Utah and New Mexico Institute of Mining and Technology was formed to provide a broad range of expertise to address these issues. However, very few sources of funding are available for the activities of this important initiative. Efforts are currently underway to motivate additional funding for ADTI in the Bureau of Land Management, US Forest Service and other agency budgets. The commitments of the organizations of these volunteer representatives to pursue such funding are a further demonstration of the needs for specific funding in addressing the issue of water quality problems associated with metal and acid drainage from abandoned mines.

The Mining Life-Cycle Center is a member of the Nevada Abandoned Mine Lands Environmental Task Force. Many opportunities are identified through this task force where innovative remedial measures may be developed and implemented through further research, however funding limitations prevent such activities. It will be difficult, if not impossible, in the future to develop and apply optimum remedial options for these sites if it is not possible to perform the necessary research and development. This could lead to unnecessary expenditures in the future.

It must be noted that there is a concern that the implementation of research results, or even performing field trials, at abandoned noncoal mine sites may face the same liability concerns faced by those who endeavor to cleanup abandoned mine sites. The Clean Water Act and the Comprehensive Environmental Response, Compensation and Liability Act, as currently written, are major stumbling blocks to progress on this issue.

The Mining Life-Cycle Center considers the proposed H.R. 2753 a very important step in addressing the environmental and water quality problems caused by drainage from abandoned noncoal mines. It will provide the authorities to perform research, develop new technologies and innovative approaches for implementing solutions to these problems. This combined with the engineering and project management expertise of the Corps of Engineers through the Restoration of Abandoned Mines (RAMS) program will be a significant contribution in addressing environmental and water quality issues at abandoned noncoal mines.

Madam Chairman, this concludes my prepared remarks. Again, I want to thank the Committee for holding this hearing and drawing attention to this important piece of legislation. I will be happy to try to answer any questions that you might have at the appropriate time.

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